

## Acute pancreatitis associated with cholera

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### ABSTRACT

Acute Pancreatitis (AP) is the inflammation of the pancreas, common causes being gall stones, alcohol, iatrogenic and trauma. Infections, mainly viral, are a rare cause of acute pancreatitis, mainly reported as case reports or series in the literature. Cholera caused by *Vibrio Cholera*, though rare these days, is characterized by vomiting and profuse watery diarrhea. We present an interesting case of Cholera complicated by mild pancreatitis with no other obvious cause following admission which was managed conservatively with full recovery. We are highlighting an unheard complication of cholera.

**Keywords:** *Acute pancreatitis, Cholera, Infections.*

**A**cute Pancreatitis (AP) is an inflammatory disease affecting the exocrine part of the parenchyma of the pancreas ranging from a mild self-limiting form to a more severe and rapidly fatal form. The reported annual incidence of acute pancreatitis ranges from 4.9 to 35 per 100,000 population [1]; though, the exact incidence has not been reported in India. Infectious organisms constitute up to 10% of causes of AP [2] but because of their rarity, evaluation for infectious agents as a cause of acute pancreatitis is not recommended [3].

### CASE REPORT

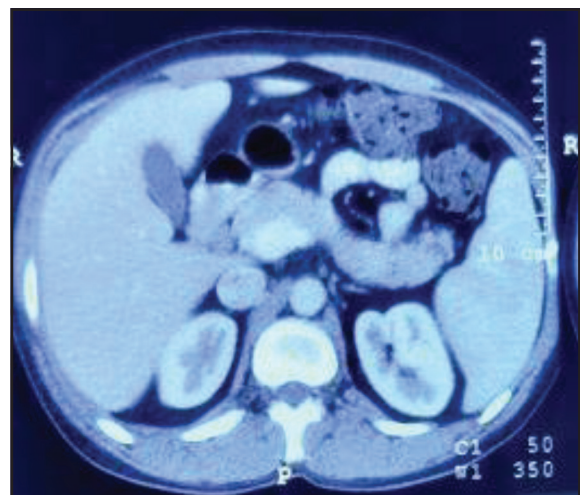
A 25-years-old male, a teetotaler with recent travel to eastern India a week ago, presented with a history of vomiting and diarrhea of one-day duration, which was rice watery, large volume, around 20-25 in number, and decreased urine output of six hours duration. At presentation, he was afebrile, sick looking and dehydrated, had hypotension (blood pressure-100/76 mm-Hg), tachycardia (pulse rate-120/min) and respiratory rate of 20/min. The systemic examination was unremarkable.

His investigations were suggestive of hemoconcentration (Hb - 19 gm/dl), polymorphonuclear leukocytosis, azotemia (urea/creatinine- 48/3.0 mg/dl) which settled by day 3 of admission (table1). Ultrasound (USG) showed a coarse hypoechoic echotexture of the pancreas. Computed tomography (CT) abdomen findings revealed bulky pancreas and mild peripancreatic fat stranding it (Fig. 1). His urgent stool examination by hanging drop method showed darting motility suggestive of *V. Cholerae*, though stool culture was negative.

Immediately, the public health authorities were informed. He was managed with intravenous fluids (Ringer Lactate), oral

rehydration solution, antiemetics (ondansetron 8 mg thrice a day) and antibiotics (Ciprofloxacin 500mg twice a day and Doxycycline 100 mg twice a day) for 3 days with normalisation of urine output by day 2. The patient didn't require renal replacement therapy. He had rapid clinical improvement with complete resolution of diarrhea by day 4 but on day 3, he developed mild epigastric pain.

Further evaluation was suggestive of raised pancreatic enzymes and oedematous pancreas with no cholelithiasis on ultrasound and CT abdomen the following week. For pain relief paracetamol (500 mg SOS) was added, nonsteroidal anti-inflammatory drugs (NSAIDs) like diclofenac and ibuprofen were avoided in view of recent acute kidney injury. He was observed for worsening of pain abdomen and other vital parameters and his epigastric pain resolved by the second week



**Figure 1:** CT Abdomen showing peripancreatic fat stranding.

Table 1: Investigation Chart of the patient.

Investigations	Day1	Day2	Day3	Day4	Day5	Day8	Day10	Day14	Day22
Haemoglobin	19.6	15.2	13.8		13.6				
TLC	18500	9000	4900		5100				
DLC	P85L11	P79L14	P82L08		P75L20				
Urea/Creatinine	48/3	32/1.8	20/0.8	27/1	33/1.1	19/1			
Sodium/potassium	135/4.0	140/3.9	138/4.3						
Bilirubin	0.7		0.8						
SGOT/SGPT	42/79		112/156						
Urine R/M	Alb 2+								
Stool Culture	-								
Stool R/M	Darting motility seen								
Amylase (IU/L)	47		726	585	361	270	190	128	43
Lipase (IU/L)	64		6400	4684	3927	2738	2274	548	102
HIV	Negative								
Triglyceride (mg/dl)			101						

**TLC:** Total leukocyte count; **DLC:** Differential leukocyte count; **SGOT:** Serum glutamic oxaloacetic transaminase; **SGPT:** Serum glutamic pyruvic transaminase; **R/M:** routine and microscopic examination.

and his pancreatic enzymes returned to normal by the fourth week (Table 1). On follow-up after one month, he was doing well and asymptomatic.

## DISCUSSION

Infections causing acute pancreatitis is a rarity. Viruses (Mumps, Coxsackie B, Human Immunodeficiency Virus, Cytomegalovirus, Hepatitis B, Herpes simplex virus, and varicella-zoster), bacteria (*Mycoplasma pneumoniae*, *Salmonella typhi*, *Leptospira*, *Legionella*), fungi (*Aspergillus*) and parasites (*Ascaris lumbricoides*, *Toxoplasma*, *Cryptosporidium*) have all been associated with AP [4]. The possible pathogenesis of AP by bacteria such as *Mycoplasma* is the production of cytokines, inflammatory response in different organs caused by the bacterial pathogen's immune modulation and vascular occlusion [5].

Cholera is an illness characterized by diarrhea and caused by gram-negative bacteria *V. cholerae*. It is endemic in the developing countries of Asia and Africa and has caused epidemics in Asia, the Middle East, and South and Central America [6]. Pneumonia in children probably due to aspiration, acute tubular necrosis, and cholera sicca are some of the common complications of severe diarrhea, while no chronic complications are mentioned [7]. In our patient, there were no other etiological causes of AP, and the causal relationship could not be established like the presence of bacteria in pancreatic tissue. However, we have associated it with *V. cholerae* as there has been case reports of sporadic AP associated with bacteria causing gastroenteritis [2].

The basis for diagnosis was clinical features associated with darting motility on hanging drop specimen, though the stool culture was negative likely because of incomplete laboratory infrastructure at our center [8]. Though *Campylobacter* also has darting motility on microscopic examination but is suspected clinically in the setting of severe abdominal pain and diarrhea

initially followed by bloody stools [9]. AP was diagnosed in view of mild epigastric pain, raised pancreatic enzymes and bulky pancreas with mild peripancreatic fat stranding on imaging studies.

## CONCLUSION

To conclude, we want to highlight cholera as a rare cause associated with acute pancreatitis, which has not been reported in the literature to the best of our knowledge.

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